

FIG. 1

1 CTATGGCTCTTAGCCAAACCAAGCCAAGTTCCAAAGGATTCGTCGTGATGATTGG
-32 M A L S Q N Q A K F S K G F V V M I W

60 GTACTATTCTTGCTGTGCTATAACTCAACTGAAGCTAGTCTAACCAAATGCCAACAG
5 -13 V L F I A C A I T S T E A S L T K C Q Q
-1 +1
120 CTCCAGGCCTCGGCTAACAGTGGTCTGATAGGTACTTATGTACCACAATGCAAAGAACG
8 L Q A S A N S G L I G T Y V P Q C K E T

180 GGAGAGTTCGAAGAAAAACAATGCTGGGATCGACTGGTTACTGTTGGTGTGGATGAA
10 28 G E F E E K Q C W G S T G Y C W C V D E

240 GATGGAAAAGAGATTCTAGGAACCAAGATCCGTGGATCTCCGGATTGCAGCCGCAGAAAA
48 D G K E I L G T K I R G S P D C S R R K

300 GCCCGCTTAACACTTGCCAGATGATGCAAGCCATCATTGTTAATGTCCTGGTGGTGT
68 A A L T L C Q M M Q A I I I V N V P G W C

15 360 GGCCCTCCATCGTGTAAAGCTGACGGCAGTTGACGAGGTTCACTGCTGCGCAAGTAAT
88 G P P S C K A D G S F D E V Q C C A S N

420 GGAGAATGCTACTGTGTGGATAAGAAAGGAAAGAACTTGAAGGCACAAGACAACAGGGA
108 G E C Y C V D K K G K E L E G T R Q Q G

480 AGGCCAACCTCGGAAAGACACCTAACGAAATGCGAGGAAGCTCGAATCAAGGCGATTCA
20 128 R P T C E R H L S E C E E A R I K A H S

540 AACAGTCTTCGTGTTGAGATGTTGCGCCAGAGTGTAGAAGATGGATCATATAACCCA
148 N S L R V E M F V P E C L E D G S Y N P

600 GTACAGTGCTGGCCTAGCACAGGATACTGTTGGTGCCTCGATGAAGGAGGGTAAAGGTA
168 V Q C W P S T G Y C W C V D E G G G V K V
25

660 CCAGGTTCCGATGTCAGATTAAACGCCACATGCTAAGAAAAACACAGTGAACAAAGT
188 P G S D V R F K R P T C ---
199
720 GGCTAGTTCCAGATCGAAAATAACTACAAAGGATTAATAAAATGTTAAATAATTCTC
30 780 AATTGGCTGTGATATATTTCAGATAATTAAATCTGATGTTAACAGAAAAC
840 AATCTCAACTAGAAATAAGACTACGGTAATAATGACAAAAAAAAAA

FIG. 2

thyroglobulin domains with demonstrated CPI activity

human invariant chain	LTKCQ--EEVSHIPAVHPGSFRPKC-DENGNYLPLQCYGSIG--YCWCVFPNGTEVPNTRSR-GHNN-CSES
rat invariant chain (192-258)	KVLTKCQ--EEVSHIPDVHPGAFRPKV-DENGNYMPLOCHGSGTGG--YCWCVFPGTEVPHKSR-GRHN-CSEP
chum salmon egg inh.	HVPIDGIFHLKTPCE-LARDAATHGPIGGFIPTC-DYNGQVTPEQCGWGSGTGG-YCWCVNSSGQKLPGDTPPGSASNC
equistatin cDNA DOMAIN I	SITRKCQ--QLQASANSGLIGTYWPQC-KETGEFEEKQCGWGSGTGG-YCWCVDEDGKEILGTKIR-GSPD-CSRRK
equistatin purified domain I (protein sequence variants)	SLSKCQ--QLOQASANSGLIGAYWPQC-KETGEFEEKQCGWGSGTGG-YCWCVDEDGKEILGTKIR-GSPD-CSRRK T V

thyroglobulin domains with demonstrated aspartic protease inhibitor activity (either domain II or III)

equistatin cDNA DOMAIN II	AALTLCQ--MMQAIIVNVPGCGPPSC-KADGSFDEVQCCASNG--ECYCVDKKGKELEGTRQQ-GRP-TCEERHL
equistatin purified domain II (protein sequence variants)	AALTLCQ--MMQAIIVNVPGCGPPSC-KADGSFDEVQCCASNG--ECYCVDKKGKELEGTRQQ-GRP-SCERHL T
equistatin cDNA DOMAIN III	SECEEARIAKHSNSLRLVEMFWPEC-LEDGSYNPVQCPWPSSTG--YCWCVDGGVKVPGSDVRFKRP-TC
equistatin purified domain III (protein sequence variants)	SPCEEARLQAHNSNLSLRVGMFWPQC-LEDGSYNPVQCPWPSSTG--YCWCVDGGVKVPGSDVRFKRP-TC E IK L D

thyroglobulin domains with unknown protease inhibitor activity

mouse nidogen (824-892)	EHILGAGGADAQRTIQLGMFVPOC-DEYGHYVPTQCHHSTG--YCWCVDGGRELEGSRTPPGMRPPCLST
human epithelial glycoprot (75-146)	GSKLGRRRAKPEGALLQNDGLYDPDC-DESGLFKAKQCGNG-TS-MCWCVNTAGVRRTDQDTEIT--CSERVRTY
bull frog saxiphilin(178-225)	KCLKERQVALGGDEKVLGRFVPOC-DEKGNYEPQOQFHGSTG--YSWCVNAIGEETAGTKTPPGKIPAC



Thyroglobulin 1.1 (29-73) YVPOC-AEDGSFQTVQCLNDGR---SCWCVGANGSEVLGSRQP-GRPVAC
Thyroglobulin 1.2 (97-141) YLPRQC-QDSDGYAPVQCDVQHV---QCWCVDAAEGMEVYGTROL-GRPKRC
Thyroglobulin 1.5 (597-639) FVPS-C-TTEGSYEDVQCF-S-G---ECWCVNWSKGELPGSRVRDGQP-RC
Thyroglobulin 1.6 (664-707) FVPPAC-TSEGHHFLPVQCFN--S---ECYCVDAEQAIPGTRSAIGKEKKC
Bovine thyroglobulin (1143-1215) QCPSLCVELQSGVPSRTSPGVSACRAEDGGFSPVQCDPAQG---SCWCVLSGSEEVPGTRVA-GSQACESP
Mouse enactin (844-923) KTRCQLEREHILGAAGGADAQRPTIQLQGMFTPOC-DEYGHYVPTQCHHSTG---YCWCVDRDGRELEGSRTPPGMRPPCLSTVAP
Human IGF-binding protein-3 YGPCREMEDTLNLKFLNLVLSPRGVHTIHC-DKKGFYKKKQCRPSKGRKRGFCWCVDIKYQQPLPGYTTKGKEDVHCYSMSQK
Human testican (305-381) QKPGGLPCQNEMNRIGKLSKGKSLIGAFIPRC-NEEGYYKATQCHGSTG---QCWCVDIYGNELASRKQ-GAV-SCHEEQET

consensus

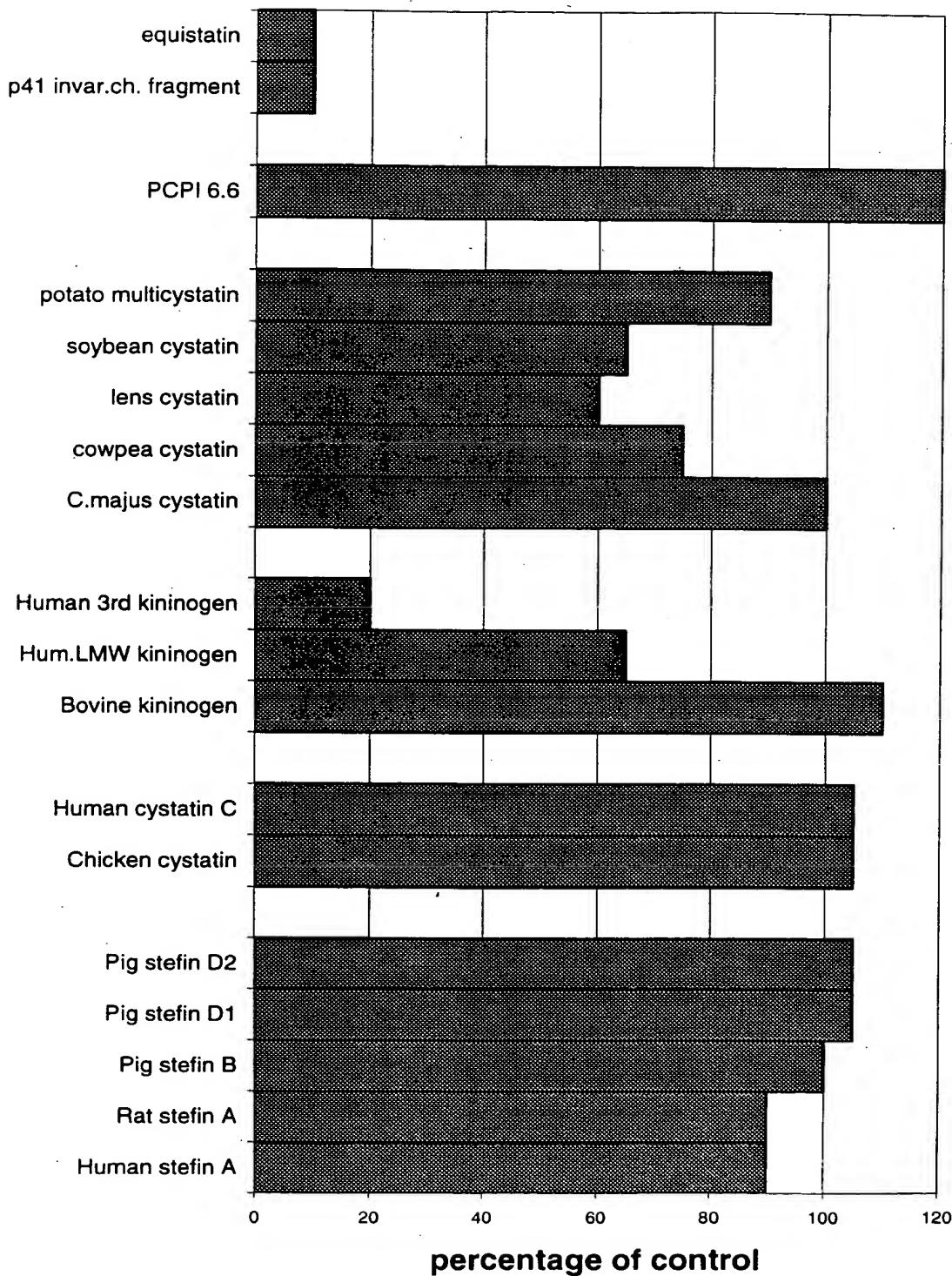
C-----//-----P-C-----G-----QC-----CWCV----G-----//-----C

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Figure 3



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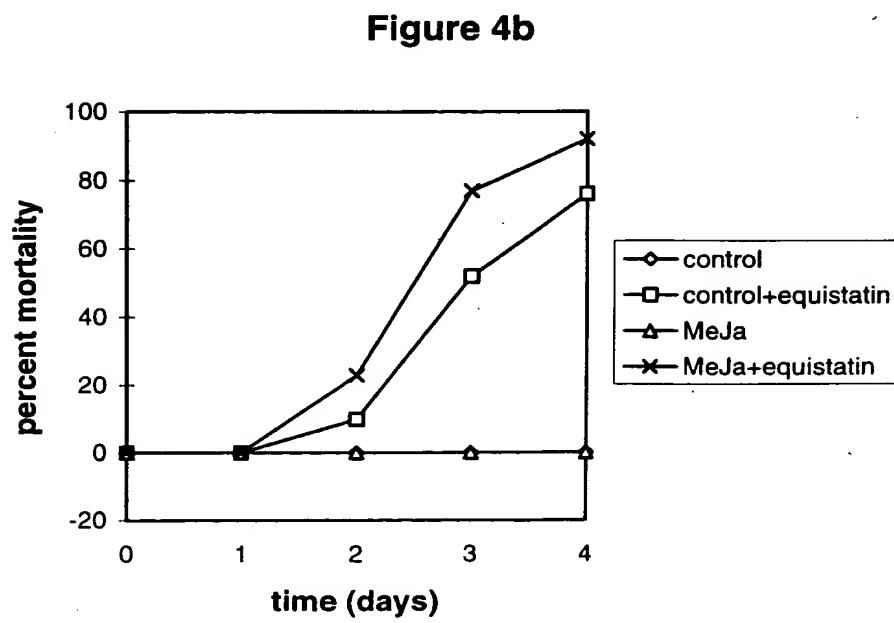
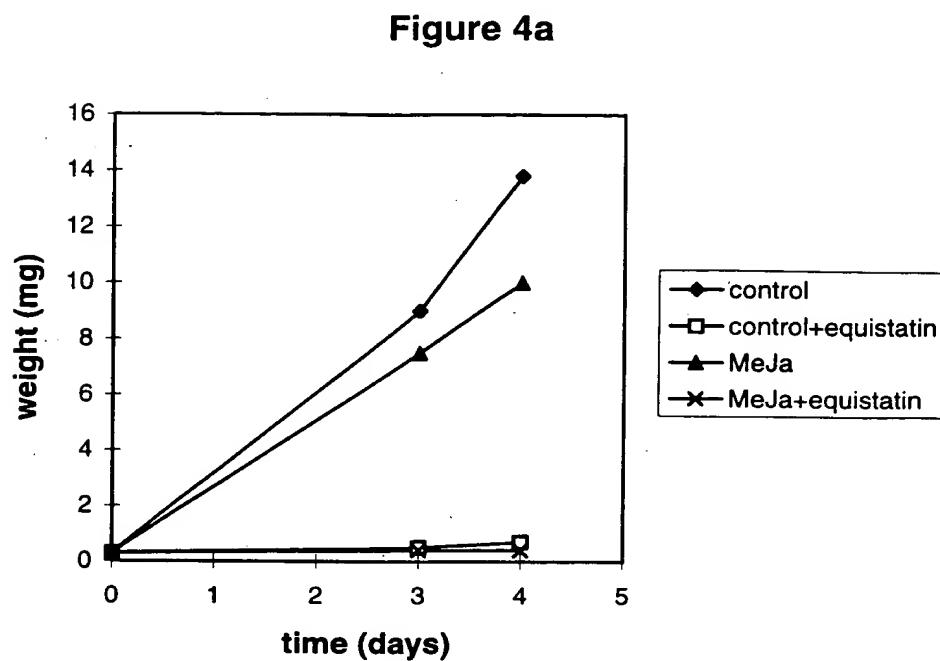
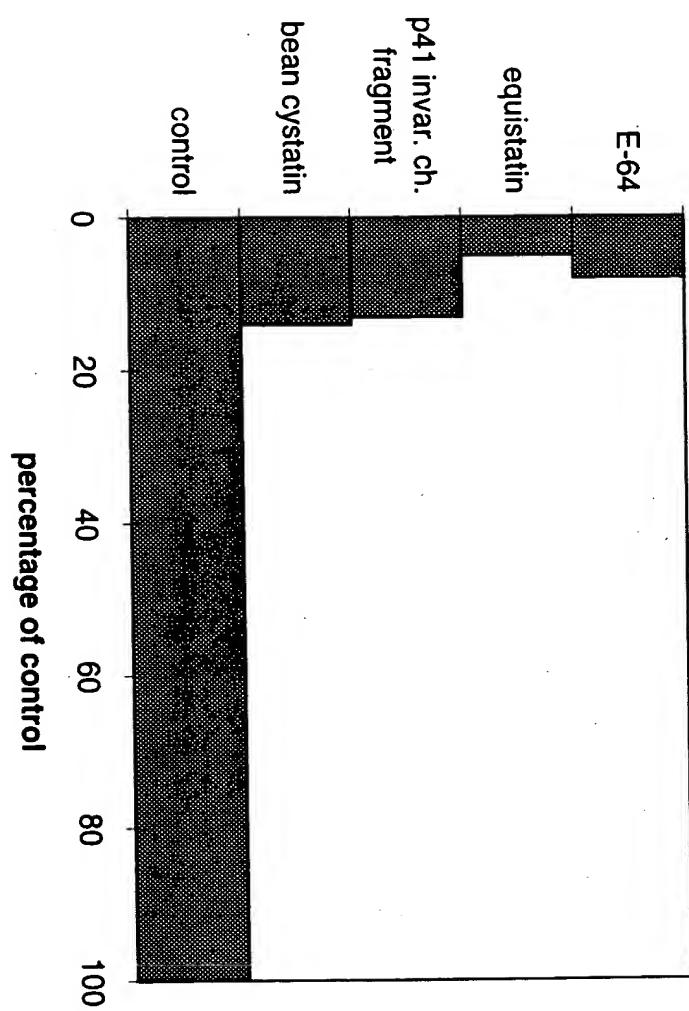


Figure 5



Fecundity of thrips adults on diet with equistatin (day 2)

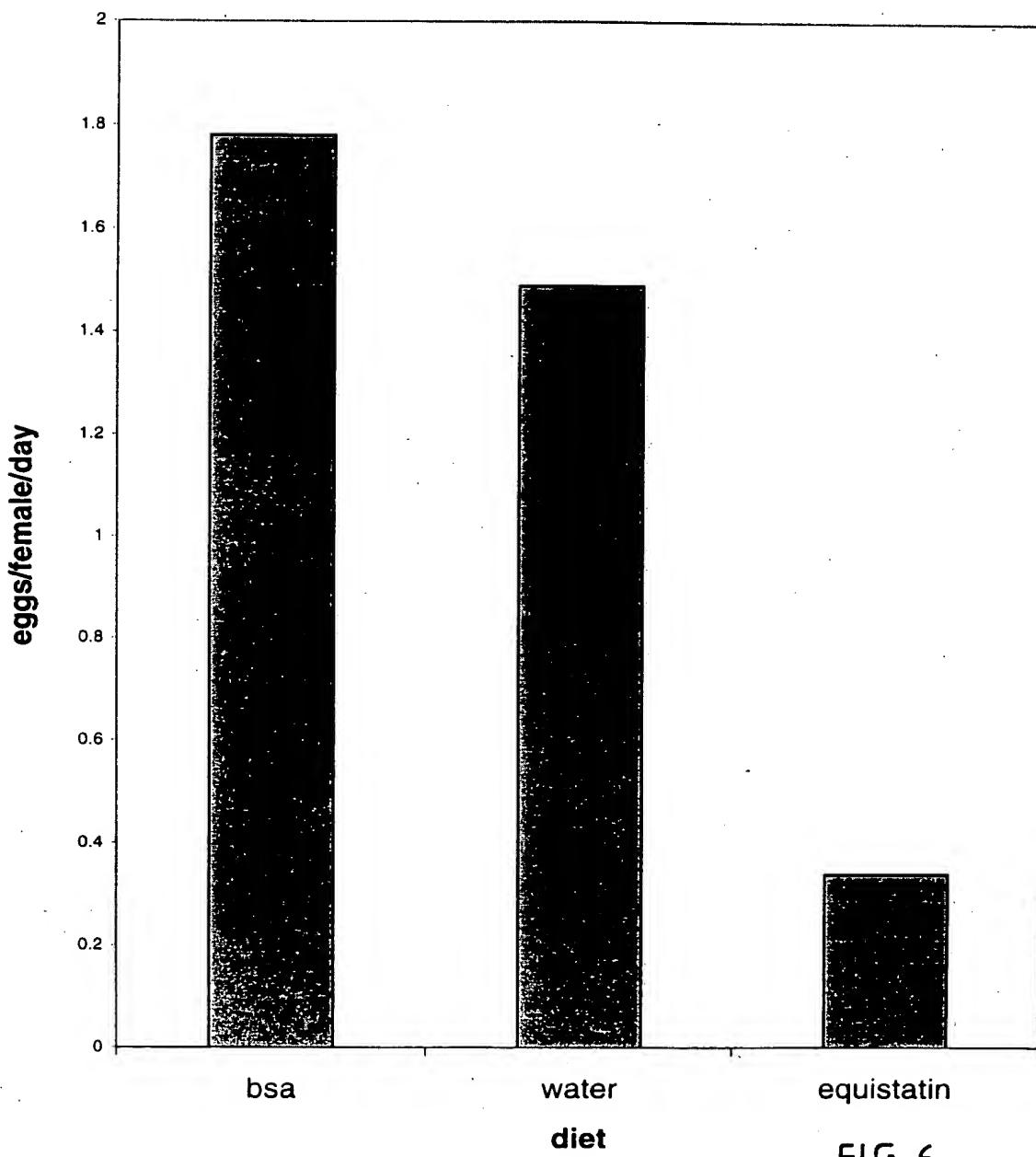


FIG. 6

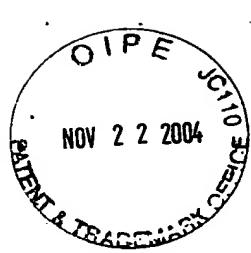


FIG. 7

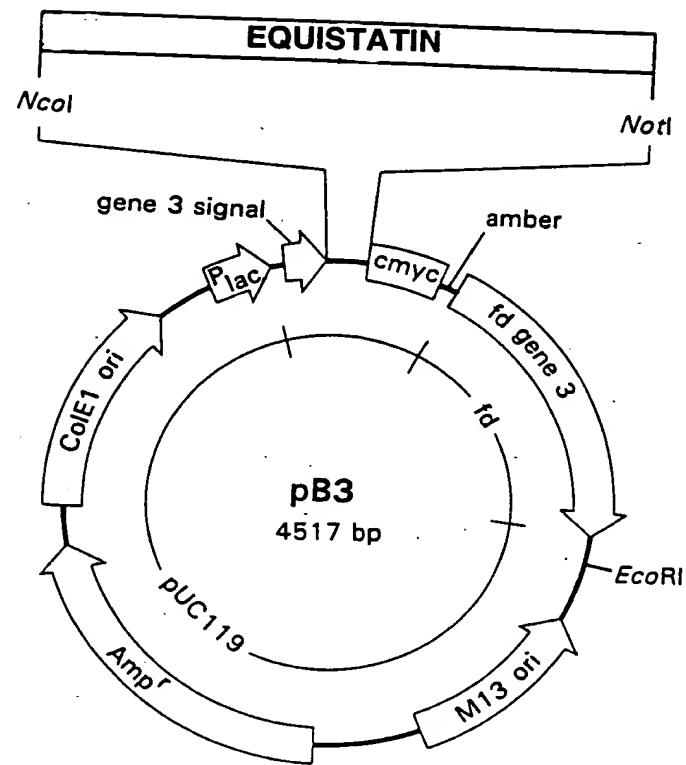
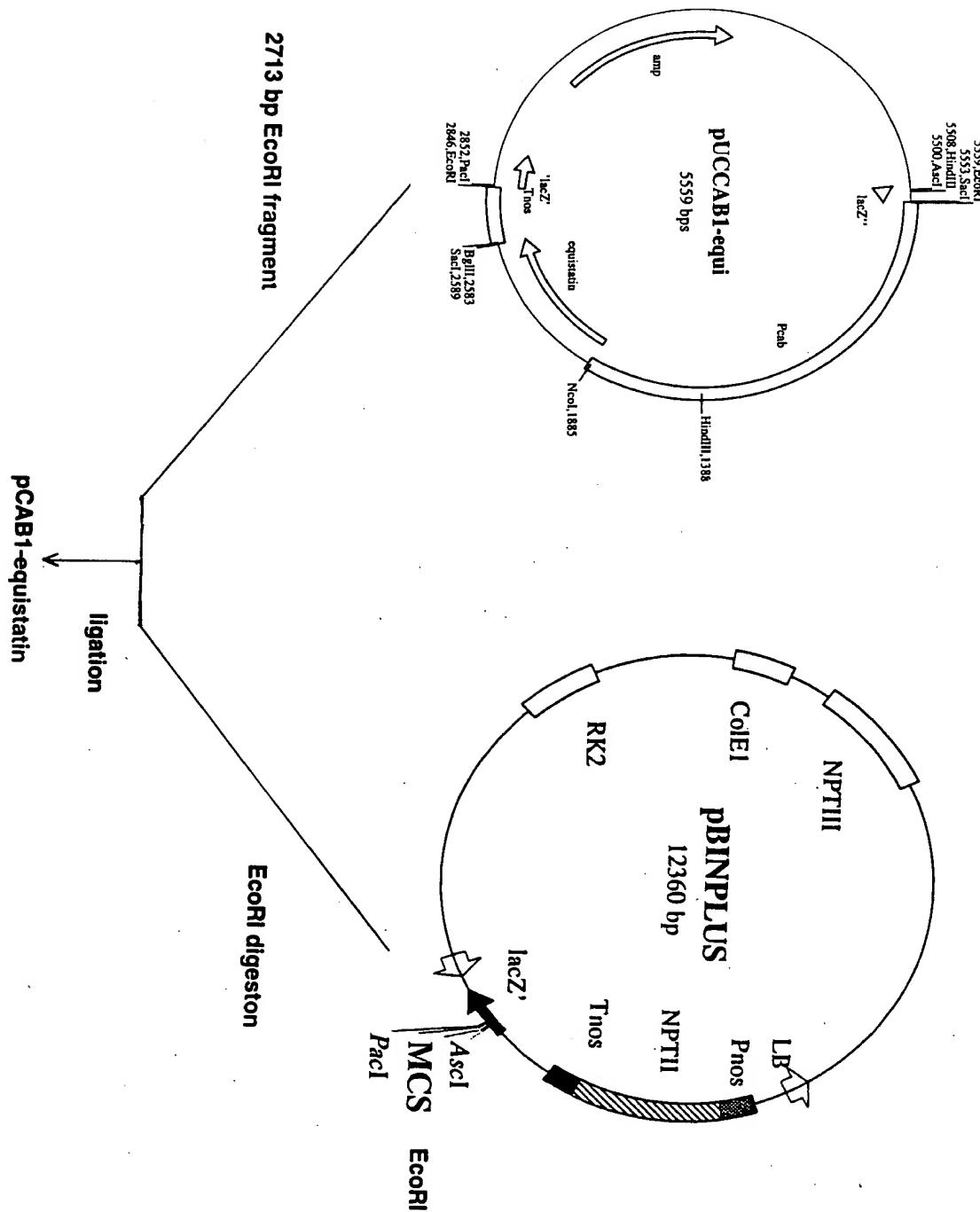


FIG. 8



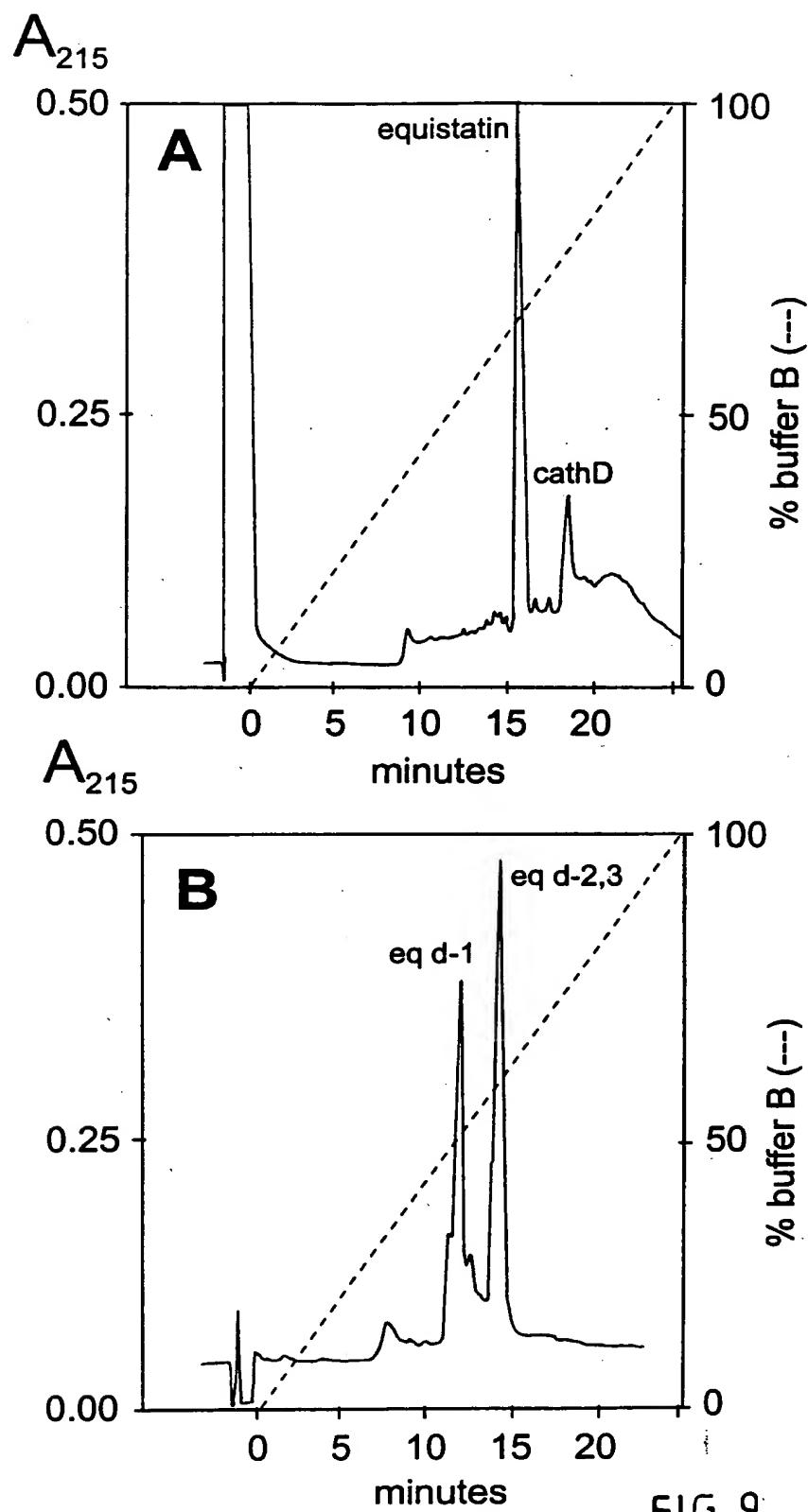
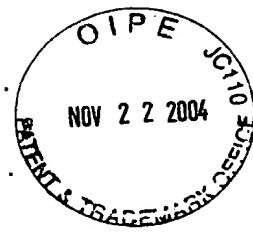


FIG. 9

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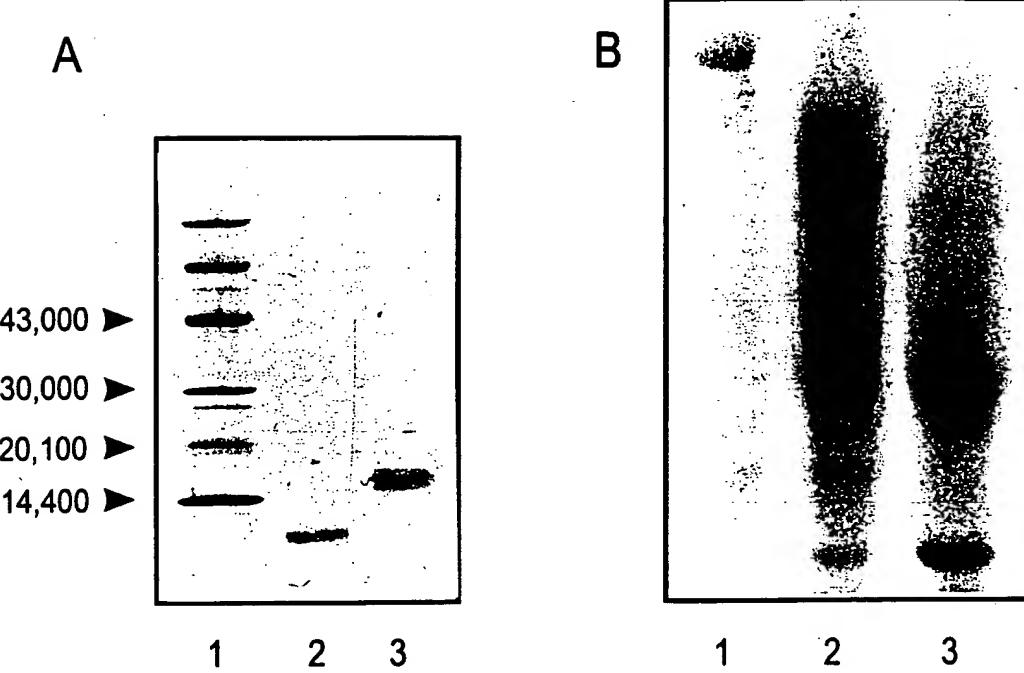


FIG.10

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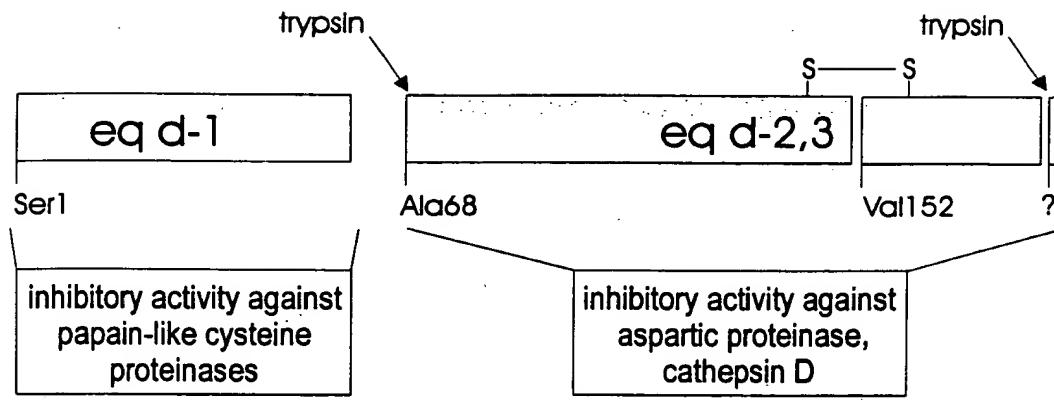


FIG.11

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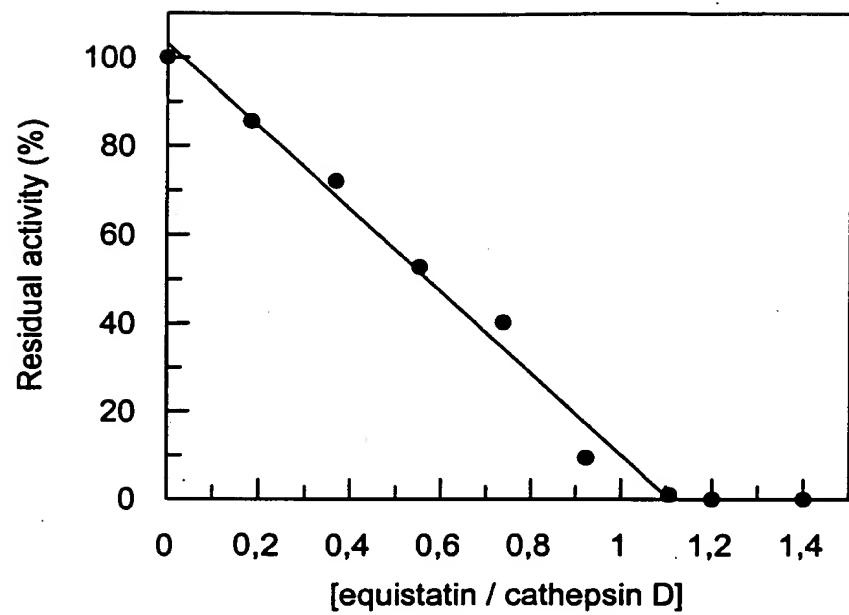


FIG. 12